

**MBNMS Research Activity Panel  
Meeting Summary  
January 9, 2015**

**Host:** James Lindholm – Nearshore Ecology (CSU Monterey Bay)

**Location:** Tanimura and Antle Family Memorial Library  
Building 508, Rm 1176  
Divarty Street  
California State University Monterey Bay  
Seaside, CA

**Date:** Friday, January 9<sup>th</sup>, 2015; 9:00 am to 12:00 pm

**Members:**

	<b>Discipline</b>	<b>Primary/ Alternate</b>	<b>Name</b>	<b>Institution</b>
X	Research Coordinator		DeVogelaere, Andrew	Monterey Bay National Marine Sanctuary
	Biological Oceanography	primary	Kudela, Raphael	University of California, Santa Cruz
	Biological Oceanography	alternate	Chavez, Francisco	Monterey Bay Aquarium Research Institute
	Deep-Sea Ecology	primary	Cailliet, Greg	Moss Landing Marine Laboratories (retired)
X	Deep-Sea Ecology	alternate	Haddock, Steve	Monterey Bay Aquarium Research Institute
	Estuarine Ecology	primary	Lindley, Steve	NOAA Fisheries Service
	Estuarine Ecology	alternate	Wasson, Kerstin	Elkhorn Slough NERR and Foundation
X	Fisheries	primary	Sogard, Susan	NOAA Fisheries Service
X	Fisheries	alternate	Grimes, Churchill	NOAA Fisheries Service (retired)
X	Marine & Coastal Geology	primary	Storlazzi, Curt	United States Geological Survey
	Marine & Coastal Geology	alternate	Paull, Charles	Monterey Bay Aquarium Research Institute
	Marine Conservation Biology	primary		
X	Marine Conservation Biology	alternate	Micheli, Fiorenza	Hopkins Marine Station
	Marine Policy	primary		
	Marine Policy	alternate	David, Aimee	Monterey Bay Aquarium
	Nearshore Ecology	primary		
	Nearshore Ecology	alternate	Carr, Mark	University of California, Santa Cruz
X	Physical Oceanography	primary	Ramp, Steve	Soliton Ocean Services, Inc.
X	Physical Oceanography	alternate	Cheriton, Olivia	United States Geological Survey
X	Shelf & Slope Ecology	primary	<b>Lindholm, James†</b>	California State University Monterey Bay
	Shelf & Slope Ecology	alternate		
	Social Sciences	primary	Pomeroy, Caroline	California Sea Grant Extension Program
	Social Sciences	alternate	Scorse, Jason	Monterey Institute of International Studies
X	Water Quality	primary	<b>Hunt, John†</b>	University of California, Davis
	Water Quality	alternate	Epel, David	Hopkins Marine Station

\*Sanctuary Advisory Council Member: Research (Primary)

†Sanctuary Advisory Council Member: Research (Alternate)

**RAP Coordinator:**

X	Burton, Erica	Monterey Bay National Marine Sanctuary
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**GUESTS:**

Ammann, Karah	University of California, Santa Cruz
Daly, Alexandria	California State University Monterey Bay
Essert, Chris	Monterey Peninsula College
Friedman, Whitney	University of California, San Diego
Hoffman, Gary	Sanctuary Advisory Council
Joseph, John	Naval Postgraduate School
Key, Meisha	California Department of Fish and Wildlife
Knight, Ashley	California State University Monterey Bay
Michel, Paul	Monterey Bay National Marine Sanctuary
Rosevelt, Carolyn	NASA-Ames/CSU Monterey Bay

**CONSENT ITEMS**

## Introductions/Modifications to the Agenda (Lindholm)

- California Sea Grant update replaced with MBNMS Superintendent update
- 2015 meeting hosts sign-up sheet passed around to members; still need July host

**HOST PRESENTATIONS AND DISCUSSION**

## Marine Science at CSUMB Update (Lindholm)

- 425 undergraduate students (BS Marine Science)
- 25 graduate students (MS Applied Marine and Watershed Science)
- 13 lecturers and 17 staff
- Reorganization of science program to unify and strengthen
- New: CSUMB is host campus for CSU Council on Ocean Affairs, Science and Technology (COAST) – internships
- Marine Science moving to old Monterey Herald building (Upper Ragsdale Rd, Monterey)
  - Marine facilities and faculty
  - Upper division classes
  - Plan to occupy in summer 2015
- Recent Research
  - Habitat Suitability Indices=ROV Imagery+Topographic maps
    - e.g., Canary rockfish inside/outside state MPAs (Bodega Head)
  - Science Diving Program growing (AUS divers)
  - Stereo Diver-Operated Video (DOV) – developing methods and course
    - Will compare/complement ROV surveys
    - New Spring course (Phase 1) – Marine Biogeography of California; 4 sites along the California coast (Jenner to La Jolla; MPAs); Phase 2 will expand to other CSU campuses
    - Method advantages: stereo system triangulation can accurately estimate fish size; relatively inexpensive (compared to ROV, other methods)
    - Phase 3 (preliminary): Expand to Chile
- Storlazzi mentioned that new software (3k) is available – structure ocean technology; overlap images for DEMs (digital elevation models)

## MBNMS Superintendent Update (Paul Michel/MBNMS)

- Management Plan Update: ramping up for 3-yr process
  - Update will address accomplishments and work still needed

- Many science questions within plan
- Kick off late spring, early summer
- Public scoping
- Speaker series on science w/live audience (Oceans Live)
  - At Museum of Monterey
  - Will air on *Your Sanctuary* TV (AMP)
  - **ACTION: Send DeVogelaere email if interested in speaking**
- *Your Sanctuary* TV (on YouTube)
  - New episode – “Mysteries of the Deep” (lost shipping container)
  - <https://www.youtube.com/watch?v=wrM95bt-IHk&feature=youtu.be>
- Sanctuary Exploration Center
  - Updating, and new, exhibits
- Science and Research
  - Condition Report should be complete in May
  - Condition Report will kick off Management Plan Update
- Davidson Seamount mission in May 2015 (~10 days)
- Integrated Ecosystem Assessment (IEA): Ecosystem Health indicators

## **SANCTUARY ADVISORY COUNCIL UPDATE**

Summary of October 24<sup>nd</sup> and December 12<sup>th</sup> SAC meetings (Hunt/Lindholm)

- Oct 24th at Cambria (Hunt), highlights included:
  - Update on state MPAS (CDFW/OPC), including upcoming RFP from OPC for central coast MPA monitoring
  - Crab pot removal effort
  - Sanctuary site nomination process
  - Working Group updates
  - SAC statement on noise in the sanctuary
- Dec 12th at Monterey (Lindholm), heavy rain (low turn out), primarily administrative:
  - 2015 Calendar
  - SAC Charter Revision: we will continue as RAP
  - DeVogelaere gave informational talk on Marine Biodiversity Observatory Network (MBON)
  - Working Group updates
  - SAC member updates
  - Whale Entanglement Team (WET; 4-5 members) update
    - Transponder (6k) used overnight to track gear for multi-day missions
    - Perhaps research community can provide additional transponders
  - *Your Sanctuary* TV update
- Next SAC meeting February 20th; if RAP wants to voice issue to SAC, let James know
- For SAC meeting information, see: <http://montereybay.noaa.gov/sac/sacma.html>

## **PRESENTATIONS REQUESTED BY RAP**

Documenting the Impacts of Sea Star Wasting Syndrome (Karah Ammann/UCSC)

- Trend: Lesion to mush 4-8 weeks
- Sea Star Wasting Syndrome (SSWS) first showed up in WA during Spring 2013
- How does event differ from previous events?

- Not associated with El Nino
  - Continuing through winter
  - Geographic extent much broader
  - Previously only 2-3 spp; now 20 spp.
- Long-term Sea star surveys (PISCO, MARINe, BOEM)
  - Radius measured
  - Disease category assigned
- Citizen science data included
- Intertidal and subtidal affected (different spp being monitored)
- Tracking map available at: [www.seastarwasting.org](http://www.seastarwasting.org)
- Abundance and size monitored
- Observed arm regrowth/healing
- New recruits and juveniles (<25 mm) at some sites
- Created juvenile sea star observation log
- Part of the story...new paper by Hewson et al. 2014: densovirus associated w/SSWS and mass mortality
  - Densovirus (water-borne) previously present in historic collections
  - Encounter rate of densovirus probably hasn't changed over time
  - Likely a complex interaction; other stressors
  - Other organisms carry densovirus (e.g., urchins)
- What's next?
  - Continue monitoring of sea stars and other affected echinoderms (carriers, no symptoms)
  - *Pisaster ochraceus* is basis of keystone species concept, SSWS has potential to dramatically alter rocky shore community
  - Impact of SSWS on community needs to be assessed
- Demonstrates monitoring data is important for non-question driven science

#### Monterey Bay Acoustics Group Update (DeVogelaere)

- Informal Group (lunch chats): John Ryan, Alison Stimpert, Jeremy Goldbogen, John Joseph, Brandon Southhall
- Currently: What has been happening with sound in Monterey Bay?
- MBARI: Internal proposal; hydrophone at end of MARS cable; technology to put hydrophones on AUVs
- NPS: Training how to interpret data sets
- CeNCOOS: Interested in managing in-coming data
- NPS/MBARI:
  - Coursework to deploy temporary hydrophones off R/V *Fulmar*
  - Opportunity to compare sounds from past (SOSUS array) to current work
- MLML: Recent marine mammal tagging
- MBNMS: NOAA Ship *Bell M. Shimada* at Davidson Seamount in May 2015, deploy hydrophone during marine mammal survey
- Sanctuary Exploration Center Exhibitry: live or canned sounds
- HMS (Goldbogen): MBNMS research permit to measure sound in MBNMS

- NOAA:
  - SAC letter on sound;
  - ONMS: Center of Excellence (Stellwagen; Hatch)
  - ONMS: sound reference stations (OCNMS, CINMS, MBNMS-proposed)
  - HQ request to review document “NOAA ocean sound strategy”
  - **ACTION: Can the RAP comment? (re: big concepts)?**

## **SANCTUARY RESEARCH UPDATE**

How ONMS is thinking about research at regional and national levels (DeVogelaere)

- MBNMS placement in hierarchy: DOC/NOAA/NOS/ONMS/MBNMS
- 13 national marine sanctuaries, 1 marine national monument
- ONMS Conservation Science Program; current interests include:
  - Natural science and socioeconomics
  - Condition Reports: adding confidence levels and social science
  - Sanctuaries as sentinel sites
  - Communicating science thru video and social media
  - Noise and soundscapes
  - Marine Biodiversity Observatory Network (MBON)
  - Centers of Excellence to share staff expertise: climate, sound, UAS
  - Hollings Scholars (9 wks); Nancy Foster Scholars (300k)
- ONMS West Coast Region
  - Shared staff among sites, topic representatives
  - Pacific Fishery Management Council Essential Fish Habitat (EFH) proposals
  - Reduce whale/ship strikes
  - Introduced species regulations
  - Gulf of the Farallones and Cordell Bank expansions
  - Boat operations and life cycle plans
  - Meet w/NMFS and state agencies
  - Nomination process for new Sanctuaries (<http://www.nominate.noaa.gov/>)
- Summary
  - SIMoN tracks monitoring in individual habitats
  - Condition Reports use monitoring information and experts to assess health
  - IEA will pick standard parameters to measure
  - MBON will gather data and present it for near real time status and trend assessments

## **QUICK UPDATES ON NEW HIRES AT INSTITUTIONS; AND FACILITY UPDATES**

- UCSC (Carr/Raimondi lab): SSWS latest focus
- HMS (Micheli): new hire Jeremy Goldbogen (Jan 2014); building(s) renovation; Kelp Forest Array continues w/FOCE testing
- MBARI (Haddock): 3 positions to be back-filled (Bellingham moved to WHOI; Etchemendy and CFO retiring); Bioacoustics position; semi-replacement for Brewer (chemical oceanography); R/V *Western Flyer* going to Gulf of California for 100 days; time-lapse sea star camera (tripod) returned from Antarctica; camera at power buoy; Francisco organizing MBON meeting next Thursday
- NMFS (Sogard): starting project (w/partners) to measure low oxygen in lab at NMFS;

- USGS (Storlazzi): 2 relatively new hires for seismic research; hazards research; ~monthly ripple-scour depression research; 30 yrs wave data (web download-able maps/data, [http://axiomdatascience.com/maps/usgs/wave\\_model/](http://axiomdatascience.com/maps/usgs/wave_model/)); new organic geo-chemist (Pam Strasinski); Ryan Walter at CalPoly SLO
- SOLITON Ocean Services (Ramp): still in business; renewing RAP membership; verifying propagating models;
- Sanctuary Currents Symposium (Lindholm): call for research posters announced; plenary speakers (Haddock; Friewald; Casselle; Hanneman); Exhibitry; Ricketts = Raimondi

#### **SUGGESTED FUTURE AGENDA ITEMS**

- Hunt: scoping management plan and relation to Condition Report
- James: new MBA hire Brandon Kelly (~replaced Chris Harrold)
- DeVogelaere: report out on acoustic review; speaker series

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**Future Agenda Items (running list):**

- MBNMS Updates:
  - Sanctuary Ecologically Significant Areas (SESAs)
  - Integrated Ecosystem Assessment (IEA)
- Water Quality:
  - Follow-up to Hunt's WQ presentation (9/12/14), where does all the data go? Successful uses, shared capability, proper use of data (per Scorse); Roy Mendelson would be good speaker (per Lindley)
  - Ocean-based WQ presentation (per Hunt)
  - Elkhorn Slough Report Card:  
[http://www.elkhornslough.org/research/waterquality\\_reportcard.htm](http://www.elkhornslough.org/research/waterquality_reportcard.htm)
- Leadership changes at Big NOAA, and how affects little NOAA (MBNMS)
- RAP Membership:
  - Revisit RAP member policies including representation: discipline vs institution; available at: [http://montereybay.noaa.gov/sac/rap/history/rap\\_policies.html](http://montereybay.noaa.gov/sac/rap/history/rap_policies.html)
- ~~2<sup>nd</sup> update on Sea Star Wasting Syndrome~~
- SAC Charter revision
- Acoustic and seismic surveys
  - Continuation of SAC resolution to ban seismic air gun surveys
  - Seismic testing off Connecticut (per Storlazzi)
  - ~~Monterey Bay acoustics group headed by Jeremy Goldbogen (HMS), John Ryan (MBARI), John Joseph (NPS); grant proposal; team of scientists to address issue (per DeVogelaere)~~
  - Center of Excellence for acoustics in development at GFNMS, Leila Hatch (SBNMS) involved (per DeVogelaere)

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**2015 RAP Meeting Schedule and Locations**

<b>Date</b>	<b>Host</b>	<b>Location</b>
January 9	Lindholm	CSU Monterey Bay
March 13	Wasson	Elkhorn Slough NERR
May 8	Carr/Pomeroy	Long Marine Lab
July 10		
September 11	Scorse	Monterey Institute of International Studies
November 13	Cheriton/Storlazzi	U.S. Geological Survey

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